

May 11, 1954

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During [ ]'s recent visit, he discussed with our Mr. [ ] the possibility of a new program in the Area. The outline of this program is as follows:

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1. Purpose. Evaluation of the various types of materials now being used as underground containers and/or wraps.
2. Scope. Various items would be buried at an approximate depth of three feet in a swamp, the pond and sand, gravel and loam types of soil. Various articles supplied by the client would be prepared for burial by hot dipping of various types, metal foil bags, cold dipping, polyethylene bags, plastic boxes, metal boxes of various type seals and mason jars.
3. Duration. Five years. Pick-up would be in November 1954, May 1955, November 1955, May 1957, and May 1959.

We feel that such a program would be rather worth-while since little co-ordinated information on resistance of materials under burial conditions is available. On giving this brief outline some further thought, we would like to comment that unless the program were considerably expanded, the information obtained would be of a rather limited, qualitative nature only.

Soil corrosion is of a complex nature and unless the test conditions are well defined can lead to rather misleading conclusions. On superficial analysis of the problem, we would think that the following factors are of importance for aging under burial conditions:

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Mr. A. L. Weast

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1. Redox potential
2. PH
3. Temperature, and temperature cycles for depths above frost line.
4. Bacteria (anaerobic and aerobic)
5. Moisture content and moisture content cycle.
6. Type of soil (sand, loam, clay etc.)
7. Industrial and other waste seepage.

According to some recent literature, items 1 and 2 largely control metal corrosion in soils, and it is claimed that a classification system based on these two properties can be used to well predict soil corrosion properties for about 80 per cent of the cases examined.

While we do not know whether you have selected our place just as one of a number of burial locations and, therefore, whether you would look to us for assistance in burial and removal of test items only, we definitely feel that the soil in any chosen site should be thoroughly examined for at least the above enumerated properties. Some of the tests could be carried out by us while others can be readily obtained from such institutions as the Massachusetts State College.

If you feel it worth-while, <sup>main</sup> we <sup>only</sup> definitely would be glad to discuss this matter in more detail with you.

truly,

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